What is claimed is:

1. A conductive polymer colloidal composition comprising: a polymer, and a dopant having the following general formula:

$$R—SO_3—R'$$

where R is an alkyl having from two to twelve carbon atoms, unbranched or branched; an alkenyl having from three to twelve carbon atoms, unbranched or branched; a fatty acid chain of from ten to twenty carbon atoms, saturated or unsaturated; an aryl radical, unsubstituted or substituted with two to three methyl groups, a saturated or unsaturated chain of three to twenty carbon atoms, a sulfonic acid group or salt thereof, hydroxyl group, a carboxyl group or styrene group; a naphthalene group, unsubstituted or substituted with a sulfonic acid group or a salt thereof; an anthracene group unsubstituted or substituted with a hydroxyl group or oxo group; a disulfide having from four to six carbon atoms, unsubstituted or substituted with a sulfonate; or a radical having the following general formula:

$$R''—O—(CH_2)_X—(EO)_Y—(CH_2)_Z—$$

where R'' is H, methyl, ethyl, propyl or butyl group; x is an integer of from 12 to 14; y is an integer of from 1 to 14; and z is an integer of from 1 to 5; and

R' is H, methyl ethyl or M, where M is a cation.

2. The conductive polymer colloidal composition of claim 1, wherein the dopant has the following general formula:

$$R''—O—(CH_2)_X—(EO)_Y—(CH_2)_Z—SO_3—R'$$

where R', R'', x, y and z are as defined in claim 1.

3. The conductive polymer colloidal composition of claim 1, wherein the polymer comprises polypyrrole, polyaniline, polythiophene, polyfuran or mixtures thereof.

4. The conductive polymer colloidal composition of claim 1, further comprising conductive colloidal particles of carbon, metals and their salts, or mixtures thereof.

5. The conductive polymer colloidal composition of claim 1, further comprising a stabilizer.

6. The conductive polymer colloidal composition of claim 5, wherein the stabilizer comprises a non-ionic polyether having the general formula:

$$R'''O((CH_mCH_{2m}O)_a(CH_{m'}CH_{2m'}O)_b)H$$

where R''' is a hydrocarbon group having from 1 to 40 carbon atoms, m and m' differ from each other and each is one or more integers of from 1 to 4, and a and b are integers varying between 0 and 1,000 provided that a+b is at least 3.

7. The conductive polymer colloidal composition of claim 5, wherein the stabilizer comprises a compound having the formula:

$$R'''O((CH_mCH_{2m}O)_a(CH_{m'}CH_{2m'}O))_bABD$$

where R''' is a hydrocarbon group having from 1 to 40 carbon atoms, m and m' differ from each other and each is one or more integers of from 1 to 4, a and b are integers such that there are at least 20 ethoxylate groups in the formula, A is an anion, B is a counteracting cation, and D is an alkyl group of from 1 to 8 carbon atoms.

8. The conductive polymer colloidal composition of claim 5, wherein the stabilizer comprises a compound having the formula:

$$C_{m''}H_{2m''+1}(OC_2H_4)_nOSO_3G$$

where m'' is an integer ranging from 3 to 20, G is an alkali metal and n is an integer between 3 and 1000.

9. A method for preparing a conductive polymer colloidal composition comprising:

a) adding monomers to a dispersant;

b) adding a dopant to the dispersant comprising the monomers, the dopant having a formula:

$$R—SO_3—R'$$

where R is an alkyl having from two to tweleve carbon atoms, unbranched or branched; an alkenyl having from three to twelve carbon atoms, unbranched or branched; a fatty acid chain of from ten to twenty carbon atoms; an aryl radical, unsubstituted or substituted with two to three methyl groups, a saturated or unsaturated chain or three to

twenty carbon atoms, a sulfonic acid group or salt thereof, hydroxyl group, a carboxylic acid group or salt thereof or styrene group; a naphthalene group, unsubstituted or substituted with a sulfonic acid group or salt thereof; an anthracene group unsubstituted or substituted with a hydroxyl group or an oxo group; a disulfide having from four to six carbon atoms, unsubstituted or substituted with a sulfonic acid group or salt thereof; or a radical having the following formula:

$$R''—O—(CH_2)_X—(EO)_Y—(CH_2)_Z—$$

where R'' is H, methyl, ethyl, propyl or butyl, x is an integer of from 12 to 14, y is an integer of from 1 to 14, z is an integer of from 1 to 5; R' is H, methyl, ethyl of M, where M is a cation; and

c) mixing the monomers and dopant to form the conductive polymer colloidal composition.

10. The method of claim 9, wherein the dopant has the following formula:

$$R''—O—(CH_2)_X—(EO)_Y—(CH_2)_Z—SO_3—R'$$

where R', R", x, y and z are as defined in claim 27.

11. The method of claim 9, further comprising a conductive colloidal particles of carbon, metals and their salts or mixtures thereof.

12. The method of claim 9, further comprising an oxidant, a preservative, a stabilizer, or mixtures thereof.

13. The method of claim 12, wherein the stabilizer comprises a non-ionic polyether having the formula:

$$R'''O((CH_mCH_{2m}O)_a(CH_{m'}CH_{2m'}O)_b)H$$

where R''' is a hyrdrocarbon group having from 1 to 40 carbon atoms, m and m' differ from each other and each is one or more integers of from 1 to 4, a and b are integers between 0 to 1000 provided that a + b is at least 3.

14. The method of claim 12, wherein the stabilizer comprises a compound having the formula:

$$R'''O((CH_mCH_{2m}O)_a(CH_{m'}CH_{2m'}O))_bABD$$

where R''' is a hydrocarbon group having from 1 to 40 carbon atoms, m and m' differ from each other and each is one or more integers of from 1 to 4, and a and b are integers such that are at least 20 ethoxylate groups in the formula, A is an anion, B is a counteracting cation, and D is an alkyl group having from 1 to 8 carbon atoms.

15. The method of claim 12, wherein the stabilizer comprises a compound having the formula:

$$C_{m''}H2_{m''+1}(OC_2H_4)_nOSO_3G$$

where m'' is an integer ranging from 3 to 20, G is an alkali metal and n is an integer from 3 to 1000.

16. A method for plating a surface of a substrate comprising:

a) contacting the surface of the substrate with a conductive polymer colloidal composition to deposit a conductive polymer layer on the substrate, the conductive polymer colloidal composition comprises a polymer and a dopant, the dopant is a compound having the formula:

$$R—SO_3—R'$$

where R is an alkyl of from two to twelve carbon atoms, unbranched or branched; an alkenyl of from three to twelve carbon atoms, unbranched or branched; a fatty acid chain of ten to twenty carbon atoms; an aryl radical, unsubstituted or substituted with two to three methyl groups, a saturated or unsaturated chain of three to twenty carbon atoms, a sulfonic acid group or salt thereof, hydroxyl group, a carboxylic acid group or salt thereof, or a styrene group; a naphthalene group, unsubstituted or substituted with a sulfonic acid group or salt thereof; an anthracene group unsubstituted or substituted with a hydroxyl group or an oxo group; a disulfide having from four to six carbon atoms, unsubstituted or substituted with a sulfonic acid group or salt thereof; or a radical having the formula:

$$R''—O—(CH_2)_X—(EO)_Y—(CH_2)_Z—$$

where R'' is H, methyl, ethyl, propyl or butyl, x is an integer of from 12 to 14, y is an integer of from 1 to 14, and z is an integer of from 1 to 5; R' is H, methyl, ethyl or M, where M is a cation; and

b) depositing a metal on the conductive polymer layer of the substrate.

17. The method of claim 16, wherein the dopant comprises a compound having the formula:

$$R''{-}O{-}(CH_2)_X{-}(EO)_Y{-}(CH_2)_Z{-}SO_3{-}R'$$

where R', R'', x, y, and z are as defined above in claim 16.

18. The method of claim 17, wherein the conductive polymer colloidal composition further comprises conductive colloidal particles of carbon.

19. The method of claim 16, wherein the substrate is a printed wiring board.

20. The method of claim 19, wherein the printed wiring board is multi-layered.